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PREFACE

(U) In mid-1974, Secretary Schlesinger commissioned a major DoD study involving several governmental and private research groups aimed at developing a comprehensive classified history of the U.S.-Soviet strategic arms competition from 1945 to 1972. This paper is one of numerous contributions to that project which have been generated by Rand during the past two years and is intended to provide preliminary background data and hypotheses regarding Soviet strategic programs under the Brezhnev leadership in support of a summary report now being written under the direction of Professor Ernest May of Harvard.

(U) The present draft in no way purports to be a reconstructed history of Soviet defense policy under Brezhnev in its entirety. Rather, it is simply an attempt to outline the key internal and external factors which have shaped that policy, address the broad strategic objectives that have informed and energized it, look briefly at the characteristics and deployment rationales of the third-generation ICBM programs that have most visibly dominated it, and highlight the principal features of the Soviet weapons acquisition "style" which it seems to suggest. To have gone beyond this limited scope in pursuit of greater comprehensiveness would have involved a prodigious effort which neither time nor resources permitted, and to have sought substantially greater detail and thoroughness would have required citation of compartmented intelligence data unfortunately lying above the classification of this paper.

(U) What follows is, in every sense, a first cut at the problem. It has received only cursory editing and no substantive review whatsoever. I have tried to exercise care in distinguishing known facts from my own speculations, but there will doubtless be numerous instances where questions of evidence or argumentation can be legitimately raised. There are as yet no footnotes, either in reference to sources or in elaboration on summary propositions and assertions contained in the

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text. My purpose in circulating the paper now in its highly tentative form is, most immediately, to help facilitate work on the summary report being written in DoD and, more broadly, to elicit comments and criticisms from within Rand that can be usefully incorporated in a more finished and documented version. Suggestions for revision or correction will be welcomed from all interested readers.

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I. INTRODUCTION

(U) The eight years beginning with the ascendancy of Brezhnev and Kosygin in October 1964 and ending with the signing of the SALT I accords in May 1972 embraced the most intensive and dramatic period of strategic force expansion experienced by the Soviet Union in its history as a nuclear power. Among other things, this massive force buildup included the following major achievements:

1. Culmination of the Soviet second-generation ICBM deployment program initiated in 1961 under Khrushchev, which by 1965 had given the Soviet Union an ICBM inventory of around 200 SS-7s and SS-8s and the beginnings of a silo-protected nuclear retaliatory capability.

2. Operational deployment, beginning in early 1965, of the world's first antiballistic missile capability.

3. Sustained deployment, beginning in 1967, of a sea-based deterrent consisting of SS-N-6 SLBMs aboard the YANKEE-class submarine, a landmark effort which ultimately provided the Soviet Union a credible second-strike capability roughly analogous to the U.S. POLARIS system.

4. Prototype development, flight testing, and series deployment of a third-generation of ICBMs consisting principally of the SS-9 and SS-11, which by 1969 had given the Soviet Union for the first time both an ICBM force numerically superior to that of the United States and an aggregate power status widely acknowledged as one of overall parity with the West.

5. Formal ratification of this newly acquired status through the SALT I Interim Agreement of 1972, which explicitly reflected both U.S. acceptance of Soviet strategic equality and U.S. endorsement of the principle of equality as the only feasible norm of Soviet-American strategic relations.

6. Conceptualization and prototype development, beginning around 1966, of a fourth-generation of ICBMs (the SS-16, SS-17, SS-18, and SS-19) which reflected the same momentum and purposefulness shown in the SS-9 and SS-11 programs, figured prominently in the formulation of Soviet negotiating positions during SALT I, and presently promises—at least in the view of some observers—to confer on the Soviet Union a substantial margin of

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strategic advantage if allowed to reach full deployment status unchecked by SALT constraints or U.S. countermeasures.

(U) This dramatic Soviet force buildup occurred during a time of exceptional transition in international relations, in which the NATO alliance was caught in an incipient crisis of disarray and self-questioning, the United States was fully preoccupied with the war in Southeast Asia, and the Chinese were enmeshed in the consuming domestic turmoil of their Cultural Revolution. In these circumstances, the Soviet leadership found itself unfettered by external pressures and challenges to an extent never before experienced in its fifty-year history. As such, it was free to move with unprecedented dispatch toward consolidating itself internally in the aftermath of Khrushchev's ouster, overcoming the embarrassing legacy of his humiliating rout during the Cuban missile crisis of 1962, acquiring the substance as well as the image of nuclear superpower status, and projecting the Soviet Union as a mature and credible force in the global arena

(U) This is not to say, of course, that the relative permissiveness of the external environment during the latter 1960s was the sole factor behind the intensive strategic arms buildup implemented by the Brezhnev-Kosygin regime. There were also, as we shall argue in more detail later, several important internal determinants (such as R&D program momentum and a felt need on the part of the new leadership to redress the inadequacies of the defense posture bequeathed to it by Khrushchev) which would probably have led to a resurgent Soviet weapons deployment effort of some sort regardless of the relative opportunities or constraints posed by the international milieu. All the same, the specter of a traditionally hostile anti-Soviet world beset by its own problems for a change--particularly the image of a United States so occupied by its escalating involvement in Vietnam that it had neither the time nor the resources to hold up its end of the East-West nuclear competition at the same time--must surely have struck the Soviet leadership as presenting an irresistible momentary opportunity to forge ahead in strategic arms acquisition without fear of significant Western counterdeployments. Whatever the case, by 1972 the massive strategic programs approved by Brezhnev and Kosygin in 1965 had dramatically changed the U.S.-Soviet "correlation of forces" and

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Western perceptions of it, converted the Soviet Union from a grossly inferior power still stinging from its defeat sustained in the Cuban missile crisis into a dynamic global actor with full-fledged superpower status, obliged the United States to abandon any lingering desire it may have had for recapturing strategic superiority, and played a dominant role in producing the SALT I Interim Agreement on strategic offensive forces which formally certified Soviet strategic equality with the U.S.

(U) The purpose of this paper is to review the highlights of the Soviet strategic arms buildup, examine the major internal and external influences that shaped and directed it, and address some of the key strategic policy calculations and objectives that probably informed it--either as *a priori* requirements or as *post hoc* rationalizations. It will also briefly consider the relationship between the Soviet fourth-generation ICBM program and Soviet negotiating strategy at SALT. Although all major strategic weapons will be taken into account, the major focus of the discussion will be on ICBM systems, since it is these which have been the most dominant and disturbing elements of the Soviet buildup. Before turning to these matters, however, it would be useful first to take a brief look at the prehistory of the Soviet force buildup which began back in the latter years of the Khrushchev era. While the specific force-level decisions on third-generation ICBM deployment, the R&D program starts on the fourth-generation systems, the targeting concepts associated with those decisions, and the entire Soviet SALT experience all properly belong to Brezhnev and company, the origins of the buildup--particularly the commissioning of the third-generation ICBM effort and the YANKEE-class SSBN system--were firmly laid down by Khrushchev well before his ouster and heavily affected the complexion and thrust of the strategic force expansion set underway by his successors..

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II. THE KHRUSHCHEVIAN LEGACY

(U) The drumbeat of Soviet strategic weapons acquisition and policy planning initiated by Khrushchev and continued by his successors was largely set by five discrete but closely interconnected factors: (a) U.S. public revelations following the Kennedy inauguration--based on [redacted] and other intelligence sources--that the widely feared "missile gap" had been a misapprehension all along and that the numerical missile balance in fact lay clearly in the United States' favor; (b) U.S. commitment during the early 1960s to rapid and large-scale deployment of MINUTEMAN and POLARIS; (c) U.S. articulation of an explicit counterforce doctrine to accompany the newly emerging U.S. nuclear force posture, a declaratory position which (supported as it was by the growing evidence of U.S. ICBM force expansion) undoubtedly generated real first-strike concerns in the minds of Soviet political and military leaders; (d) the resounding political-strategic defeat sustained by the Soviet Union in the Cuban missile crisis and the lessons it implied for future Soviet strategic programs and policies; and finally (e) the inertia of Soviet weapons systems already under deployment (notably the second-generation SS-7 and SS-8 ICBMs) and the forward momentum of those third-generation programs (the SS-9 and SS-[redacted]10 ICBMs, the GALOSH ABM, and the SS-N-6/YANKEE-class SLBM/SSBN combination) which by 1963 were already well along in the advanced R&D pipeline. Obviously, of course, there were additional influences of an internal nature on Soviet programs which one would naturally expect to find in an organizationally complex sociopolitical system like the USSR. Among these were Khrushchev's own strategic policy views deprecating the importance of conventional armaments and expousing a doctrinal preference for deterrence based on nuclear-missile systems, the constraints on strategic weapons procurement implied by Khrushchev's broader economic resource allocation priorities, and the presence of systemic Party-military and intramilitary disagreements over the

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relative weight to be given various missions and weapons types in the overall Soviet military planning process. Nonetheless, it was probably these five key factors (or some combination of them) that were principally responsible for defining the external threat, determining the procurement and deployment options available to the Soviet leadership, and setting the context for debate over preferred courses of action.

(S) The initial Soviet entry in the ICBM deployment field and the system upon which Khrushchev's early claims to strategic superiority were based was the SS-6, a large cryogenic booster derived from World War II German rocket technology, developed by the Korolov design bureau [redacted] and composed of four large jettisonable rocket clusters strapped around a sustainer engine core. Although the SS-6 was later to become the workhorse launch vehicle for the Soviet manned spaceflight effort of the 1960s and 1970s, it had a number of serious technical and operational limitations which made it of dubious utility as a front-line strategic weapon. One of these was a severe range/payload constraint which, given the considerable weight of then-prevailing Soviet large-yield nuclear warheads, required basing of the missile in the cold and inhospitable northern part of the Soviet Union in order to permit it to reach major targets in the United States. Another was the cryogenic fuel system, which posed obvious handling hazards for launch-crew personnel and required three to five hours of preparation time for firing, a plainly unacceptable launch-readiness capability given the quick-reaction solid-propellant systems that were entering the U.S. missile force. A third and related deficiency was the sheer complexity and elephantine bulk of the system, which required soft-site deployment with its attendant vulnerability to preemptive U.S. attack and implied massive unit-equipment costs which would have been huge for any large-scale production run. [redacted] only four known launch vehicles reached operationally deployed status, and it is doubtful that the Soviets ever intended anything more than token procurement of the system.

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(S) The major Soviet ICBM launchers of the late Khrushchev era and the systems that first engaged the Soviets seriously in the intercontinental missile deployment business were the SS-7, a storable-propellant booster developed by the newly formed Yangel design bureau [redacted], and the SS-8, a rather more conservatively designed cryogenic booster developed by Korolev's [redacted] and a competitive system probably intended as a fall-back option in the event the SS-7 proved unworkable. Both of these systems were conceptualized during the late 1950s and attained IOC during the early 1960s, before the watershed Cuban missile confrontation and its aftermath so forcibly seized and redirected the Soviet ICBM deployment decision process. Whatever the original force ceilings for these second-generation launchers may have been, however, they were doubtless rendered academic by the sweeping reassessment of Soviet strategic policy that ensued in the wake of the Cuban affair.

(U) The Soviet misadventure in Cuba itself most likely stemmed from a serious Soviet concern over the growing imbalance of strategic missile power in favor of the United States and ultimately a colossal miscalculation on the part of Khrushchev and his principal advisers that the United States would let them get away with it. The setback it dealt to the dynamism of Soviet foreign policy and to global perceptions (to say nothing of Moscow's self-perception) of Soviet strategic prowess probably had a greater impact on the direction and content of subsequent Soviet weapons acquisition policy than any other single event or series of events of the 1960s.

(S) What specific combination of triggers actually catalyzed the Soviet decision to place medium and intermediate range ballistic missiles in Cuba in 1962 is obviously impossible to say with certitude. At least two considerations, however, suggest themselves as strong possibilities. One was the explosion of the missile gap myth which followed shortly after the Soviet downing of the U-2 in May 1960, and the public assertion the following year by Deputy Defense Secretary Gilpatric that the balance of missile power indeed lay well on the American side of the ledger.

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[redacted] The U-2 episode and the Gilpatric disclosure put the Soviets on clear notice for the first time, after several years of highly successful deception and bluffing, that their strategic inadequacies were out in the open for all observers to see. The [redacted] public U.S. press discussions of the expanding MINUTEMAN and POLARIS efforts and reports that the U.S. Air Force was seeking an inventory of as many as 3000 MINUTEMAN launchers, doubtless further agitated Soviet threat perceptions by portending a U.S. force deployment commitment that almost certainly exceeded in dramatic measure the original Soviet SS-7 and SS-8 deployment schedule laid down in the Five-Year Plan of 1960-1961. These two determinants, reinforced by a probable Soviet estimate that the U.S. failure in the Bay of Pigs operation, Washington's tacit acceptance of the Berlin Wall, and the image of malleability projected by President Kennedy in his 1961 meeting with Khrushchev in Vienna all indicated a strong prospect of U.S. nonopposition, probably were among the principal factors leading toward Khrushchev's decision to proceed with his missile gambit in Cuba in 1962. Most likely Khrushchev's calculation was that the missiles in Cuba would provide a convenient "quick fix" restoring some temporary semblance of Soviet strategic parity with the United States pending the eventual culmination of SS-7 and SS-8 hard-site deployment within the USSR proper.

(U) The outcome of the Cuban affair, of course, torpedoed that calculation, sent the Soviet strategic planning community back in search of new deployment alternatives, and in all likelihood figured prominently in Khrushchev's personal undoing two years thereafter. The Soviet move in Cuba was probably seen in Moscow prior to the event not as a brazen and high-risk affront to U.S. strategic power and resolve, but rather a wholly rational operation conceived with every expectation of success. Had Khrushchev had any substantial reason to anticipate the determined reaction displayed by the United States, he quite likely would not have

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made his move in the first place. As it turned out, once he clearly saw his grand design coming apart in the escalating crisis, he quickly beat a retreat which—with U.S. forebearance—allowed the Soviet Union to retain some measure of "face," yet which left no mistake about which side had emerged from the confrontation with the winning hand.

(U) If the outcome of the Cuban missile crisis was a resounding victory for U.S. coercive diplomacy, however, it was not a victory without substantial long-term costs and consequences in the broader East-West strategic competition. It has long been heatedly debated among Western strategic analysts to what extent the fact of U.S. strategic nuclear superiority was a critical determinant of Soviet behavior during the crisis. Yet whatever effect U.S. superiority may have had in persuading Khrushchev to yield once the confrontation was joined, there seems little question that it was fundamentally--if not exclusively--responsible for the consensus that quickly developed among the Soviet leadership following the debacle that Soviet strategic *inferiority* to the U.S. was henceforth to be regarded as absolutely intolerable and that the Soviet Union must never again find itself in the position—either through excessively precipitate diplomacy or abject military weakness--of allowing itself to be so brutally humiliated by its major adversary.

(U) Whether this perceived need to eradicate decisively the image of Soviet strategic inferiority to the West left its imprint as deeply on Khrushchev personally as it did on his political successors remains somewhat unclear, however, for in the immediate aftermath of the crisis Khrushchev evidently chose to forego a crash program aimed at quickly redressing the strategic imbalance in favor of a more moderate policy designed to cultivate a relationship of détente with the United States, a policy most notably attested to by the rapid progress registered in the following year toward concluding the long-deadlocked U.S.-Soviet negotiations on the Nuclear Test Ban Treaty. Moreover, even as late as September 1964, just one month prior to his ouster, Khrushchev had committed the Soviet Party and government to long-term economic planning guidelines that would have sacrificed defense spending in favor of

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domestic programs oriented toward increasing the Soviet standard of living. Accordingly, while there is little hard evidence to go on, it does not seem an unreasonable hypothesis that disagreement between Khrushchev and his political rivals over future Soviet ICBM force levels may have been one important consideration figuring in the coup that ultimately brought him down.

(S) Yet if it was left to Khrushchev's successors to set the final production schedules and deployment ceilings (or iterations on them, as the case may be) that ultimately determined the complexion and magnitude of the Soviet force expansion during the second half of the 1960s and early 1970s, it by no means follows that the deposed Party ruler was content to sit idly by in the wake of his Cuban setback while the U.S. MINUTEMAN and POLARIS deployment programs unfolded apace. Shortly after the Cuban crisis, Khrushchev probably accelerated the SS-7 and SS-8 deployment program which was already (if somewhat desultorily) under way and which within less than a year after his ouster topped out at a total force of 225 operational ICBMs [redacted] At the same time, he probably also gave a green light to proceed vigorously with advanced RDT&E and initial deployment of the SS-9 and the SS-[redacted]-10, two competitive heavy ICBM prototypes of third-generation technology whose development had begun in their respective design bureaus a year or two earlier. In a related decision, he most likely also granted full development and deployment authorization for the second-generation Soviet SLBM effort which ultimately saw completion of the first YANKEE-class SSBN [redacted] and IOC with the SS-N-6 missile in January 1969. Finally, and in some senses most notably, he initiated the effort to develop and deploy the SS-11, a light-weight ICBM which gave every indication of being a system created wholly in the aftermath of--and wholly in response to--the Cuban missile disaster. To a greater degree than any other single Soviet weapons system conceptualized either previously or thereafter, the SS-11 bore all the earmarks of being an example of the reaction phenomenon *par excellence*. For one thing, it represented a distinct regression from the traditional Soviet tendency

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toward developing ever larger, more complex, and more expensive ICBM systems. [redacted] Finally, the SS-11 program proceeded from its beginning with an extraordinary degree of rapidity, [redacted] an event totally unprecedented in the history of Soviet ICBM development. In all probability, the SS-11 was conceived under Khrushchev as a system expressly intended to counter the U.S. MINUTEMAN deployment program, which by 1964 had been publicly declared by Secretary McNamara as aiming for a total force ceiling of 1000 launchers. And its initial rationale was probably little more than closure of the U.S. Soviet ICBM numerical gap as quickly and cheaply as possible, irrespective of the weapon's comparatively low warhead yield and negligible counterforce capability against hardened U.S. targets.

(U) Even as Khrushchev was implementing these measures, however, domestic forces were gathering which would soon lead to his downfall. The subject of Khrushchev's ouster itself is a complex matter which lies largely outside the scope of this discussion. All the same, a few words seem in order concerning the possible military-strategic considerations that figured in his overthrow, since these touch directly on the key defense policy issues that divided Khrushchev from his Party and military opponents and also are important in laying out the necessary context for understanding the major changes in policy emphasis which were instituted by the Brezhnev-Kosygin regime once it took over the helm of power.

(U) The major bone of contention between Khrushchev and his rivals on defense policy matters centered on the twin questions of what the thrust of operational Soviet military doctrine ought to be and how the Soviet strategic and theater force posture ought to be configured in order to underwrite that doctrine. Ever since his January 1960 speech to the Supreme Soviet which laid out his new guidelines for Soviet nuclear

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policy, Khrushchev had doggedly clung to what essentially constituted a minimum-deterrence preference (a fixation which continued to find expression even in his memoirs written years after his ouster). The Khrushchevian strategic perspective by and large posited that any war with the United States would most likely assume massive nuclear proportions from the outset and insisted that an adequate nuclear retaliatory capability based on nuclear-missile forces was all that was critically necessary for assuring Soviet security. The Soviet military (and doubtless its civilian sympathizers in the Party), by contrast, tended to reject this deterrence-only orientation in favor of a strategic concept which explicitly accepted the possibility that deterrence might fail and which called for a force posture and accompanying targeting doctrine oriented toward actually fighting a nuclear war in such an eventuality. In his single-minded emphasis on the importance of nuclear-missile forces in the Soviet national security scheme, Khrushchev brutally dismissed the combined-arms principle which had long figured prominently in traditional Soviet military doctrine and which had been enshrined by Soviet professional military men as an almost sacrosanct requirement for victory in war, even global war involving nuclear weapons. Perhaps most intolerable of all, however, was Khrushchev's general style of running the Soviet military planning process, an abrasive and self-assertive approach which involved the repeated and usually peremptory imposition of his own idiosyncratic preferences over the professional advice and counsel of his senior military officers and which, following his ouster, Marshal Zakharov was moved to dismiss contemptuously as "hare-brained scheming" and "so-called strategic farsightedness" on the part of one who, beneath it all, lacked "even a remote feel for military strategy."

(U) Yet while Khrushchev ultimately lost the good graces of the Soviet military and the rest of the Party leadership because of his stylistic excesses, his policy failures, and his perceived errors of judgment, he nonetheless played a crucial role in generating the basic weapons development programs which eventually figured in the massive force-level buildup presided over by his successors. Khrushchev indeed

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remained a "minimum deterrer" throughout his incumbency in power, and he most likely would have pursued a somewhat more modest weapons acquisition policy than his successors had he been able to stay in office. The common assumption that the Soviet force expansion of the late 1960s was exclusively the doing of Brezhnev and Kosygin, however, is not only substantially unfounded but also historically insensitive to the real accomplishments of Khrushchev. While the Brezhnev-Kosygin regime clearly determined the final force-levels of the buildup and remolded Soviet strategic doctrine in accordance with its own operational predispositions, it equally clearly did so through programs that were already well under way before its accession to power and forged its strategic policy largely in response to external events that occurred during Khrushchev's tenure in office.

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III. THE PERIOD OF MAJOR FORCE EXPANSION

(U) The Brezhnev-Kosygin regime assumed power on the eve of an important transition period in Soviet and international politics and lost little time in forcefully bringing its influence to bear on the course and complexion of Soviet strategic policy. On the domestic front, the Soviet Union was rapidly approaching the critical budget and program planning period for the upcoming Eighth Five-Year Plan to be implemented beginning in 1966, which would largely determine the magnitude and phasing of Soviet strategic weapons deployments for the remainder of the 1960s. Although the specific systems which would figure in the buildup were already in their advanced prototype development phase (most likely accompanied by some initial deployment commitments made during the last year of Khrushchev's incumbency), the major decisions regarding ultimate force ceilings for the third-generation boosters and R&D starts on the follow-on fourth-generation systems remained eminently open for final adjustment and formalization by the new leadership.

(U) In the international arena, the Soviet Union was still recovering from the embarrassment of its abortive venture in Cuba and, on top of that, found itself facing a whole new round of assertive foreign policy behavior on the part of the United States. Despite the post-Cuba interlude of détente atmospherics and President Kennedy's injunction that U.S. officials show humility in the aftermath of its victory, the U.S. ICBM and SLBM buildup was in full swing, numerous U.S. commentators were claiming that it had been U.S. strategic superiority that saved the day in Cuba, and Secretary McNamara was not only publicly broadcasting the fact of U.S. superiority on repeated occasions but also confidently proclaiming that the Soviet Union had indeed given up the strategic arms competition altogether. This image of a near-euphoric United States leadership all but basking in the glow of its strategic advantage could hardly have set well with the Soviet military establishment and doubtless reinforced the Soviet leadership's incentive—already well entrenched

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as a result of the Cuban missile affair—to step up its own strategic programs so as to knock the United States off its pedestal of strategic superiority and acquire a fully credible counterweight to American nuclear power. Additionally, just months prior to Khrushchev's ouster, the United States had carried out the Gulf of Tonkin reprisal against North Vietnam, an event which entailed the first overt employment of U.S. airpower in anger since the Korean War and which almost certainly was regarded in Moscow as both a direct affront to Soviet interests and a harbinger of deepening U.S. involvement in Southeast Asia that sooner or later would have to be met by a vigorous Soviet policy in return. No sooner than the Brezhnev-Kosygin regime had completed its initial consolidation of domestic power following the dismissal of Khrushchev, this incipient challenge was forcefully confirmed by the initiation of sustained U.S. offensive air operations against North Vietnam and the simultaneous commitment of massive U.S. troop strength in support of the ongoing war effort in the South. If the preceding external stimuli--the Cuban rout, the expanding U.S. nuclear force posture, McNamara's flaunting of U.S. strategic superiority, and the U.S. Gulf of Tonkin air strike—cumulatively gave the new Soviet leaders all the incentive they needed to launch a massive force improvement program of their own, the commencement of full-scale and open-ended U.S. involvement in South Vietnam (coupled with what must have seemed the ultimate insult of beginning an air offensive against the North at a time when Kosygin himself was visiting Hanoi) not only underscored that incentive but also—given its obvious diversion of American attention and resources away from the strategic arms competition—must have given the Soviets a sense of unprecedented opportunity to make unfettered progress toward decisively casting off their long-standing burden of strategic nuclear inferiority to the U.S.

A. ORGANIZING FOR THE BUILDUP

(S) The determination of the Brezhnev-Kosygin regime to put its imprint on Soviet military policy, and the vigor with which it moved in

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accelerating Soviet strategic weapons acquisition, became quickly apparent with a number of measures it implemented to consolidate the defense industry and rein the Soviet military planning process in under its close supervision and control. Perhaps most notable of these were the reconstitution of Khrushchev's old Higher Military Council as a new Defense Council composed of Brezhnev and his closest Politburo allies, and the creation of the Military-Industrial Commission (VPK), a subsidiary organization under Defense Council auspices chaired by Leonid V. Smirnov. The Defense Council, which included Brezhnev, Kosygin, and the Minister of Defense as members along with the principal overseer of the Soviet defense industry, Dimitri Ustinov, became the paramount planning body responsible for the formulation of Soviet military programs and strategies. The VPK, for its part, was tasked with providing a direct organizational link between the planning process at the Defense Council level and the implementation of programs in the various R&D entities and production ministries, and assumed major supervisory responsibilities somewhat analogous to those of the U.S. Director of Defense Research and Engineering and the Assistant Secretary of Defense for Program Analysis and Evaluation, though with something like NSC-level authority.

(S) Accompanying these two major institutional developments at the central leadership level were other organizational moves within the defense industry proper aimed at reversing Khrushchev's decentralization policies and increasing the coherence and efficiency of the weapons development and production community commensurate with the expanded deployment effort envisaged by the new regime. These moves, initiated around March 1965 and continued through the ensuing months thereafter, most prominently included the creation of a new Ministry of General Machinebuilding tasked with primary responsibility for the development and production of ballistic missiles and space launch vehicles, and the further transfer of some responsibilities to that Ministry and to the complementary Ministry of Machinebuilding which formerly resided in the Ministry of Defense Industry. They most likely represented the initial outgrowths

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of a previous decision in principle by the new leadership, made in late 1964 or early 1965, to speed up third-generation Soviet ICBM production and deployment. They also probably reflected a perceived need to begin girding up for basic R&D on the fourth-generation ICBM family, whose program responsibilities were soon to fall to the new production entities noted above and whose initial prototype development probably began getting formally under way sometime in 1966. In a related move, the Brezhnev-Kosygin regime also abolished the regional economic councils (*Sovnarkhozy*) established during Khrushchev's tenure and returned most of the various defense-related State Committees--along with all the Scientific Research Institutes (NIIs)--to Ministry status, yet another indication that the new leadership was seriously bent on putting Soviet strategic programs back on a high-intensity footing with tightly organized central direction and rapid institutional responsiveness. Final testimony that a major expansion of Soviet force deployments was in the offing came in a speech by Kosygin in the summer of 1965 on resource allocations which announced a decision "not to economize on defense" and which was followed in 1966 by an increase in defense spending over the 1965 level, apparently in support of the new Eighth Five-Year Plan that was just then coming into effect.

(S) The precise connection between the initial weapons deployment decisions made by the new regime immediately on assuming power and the formal budgeting process for the Eighth Five-Year Plan which probably commenced in early 1965 is not clear. [redacted] however, it is probably a reasonable inference [redacted] that two discrete phases or sets of program commitment occurred: (a) one shortly after the Brezhnev-Kosygin regime took office, oriented toward accelerating preexisting deployment schedules set by Khrushchev and stimulating work on new systems already in the advanced R&D pipeline; and (b) a second during the 1965 budget planning cycle which provided formal expenditure authorization and initial deployment ceilings for the third-generation ICBM force (along with the YANKEE-class SSBN and GALOSH ABM programs) and

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gave the go-ahead for design and prototype development of such follow-on systems as the fourth-generation ICBM family and the BACKFIRE variable-geometry bomber.

(S) Most likely the first of these presumed decisions principally involved closing out the SS-7 and SS-8 deployment efforts, dropping the SS-[redacted]-10 heavy ICBM which had initially been a prototype competitor to the SS-9, and proceeding rapidly with SS-9, SS-11, and GALOSH ABM deployment so as to eradicate the persistent image of Soviet strategic inferiority with a minimum of delay. In all probability, any effort at this stage to arrive at settled deployment ceilings was deferred for later consideration during the formal budget planning cycle and subordinated to the more pressing imperative of simply closing the numbers gap with the United States as quickly as possible.

(S) The second round of decisions, one may suppose, was rather more deliberative in character, involving a much larger number of political and institutional actors and directed toward systematically setting a course for Soviet strategic policy on all major weapons acquisition fronts for the remainder of the 1960s. Among other things, this decision process probably produced such later-seen developments as the upgrading of Soviet theater forces opposite NATO, the deployment of the new Soviet tactical fighter and interceptor aircraft unveiled at the 1967 Domodedovo air show, and preproduction RDT&E on the BACKFIRE supersonic bomber first observed [redacted] in 1969. It also probably gave final production and deployment authorization for the SS-N-6 and YANKEE-class SSBN, and almost certainly gave initial development approval for the fourth-generation Soviet ICBMs which ultimately commenced flight testing in 1972. Most important for the present analysis, however, the decision process attending formulation of the Eighth Five-Year Plan most probably constituted the critical phase in determining the ultimate complexion of the SS-9 and SS-11 RDT&E and deployment programs of the late 1960s, in which alternative rationales were aired and adjudicated, roles and missions were allocated, and production and deployment goals were assigned to the missile industry and the SRF for implementation.

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B. THE SS-9 PROGRAM: NEW TECHNOLOGY IN SEARCH OF A MISSION

[redacted] initial prototype development of the system began sometime prior to the Cuban missile crisis, probably in early 1962 or before. This booster, which ultimately saw development in four different variations (or "Mods"), was a large vehicle in the [redacted] throw-weight class most likely designed expressly to carry the extremely heavy and high-yield nuclear warheads previously developed during the 1961-1962 test series. In consonance with the typical Soviet design practice of competitive prototyping, it was also accompanied by a parallel R&D effort involving the SS-[redacted]10, a launch vehicle of roughly similar external dimensions and throw-weight capabilities but based on traditional cryogenic propellants (unlike the SS-9, which--along with its SS-7 predecessor--used storable liquid fuel) and apparently intended to provide a technologically "safe" fall-back option in the event the SS-9 encountered serious developmental obstacles.

(S) As noted earlier, Khrushchev probably faced a major dilemma in early 1962 over which immediate path to follow in Soviet ICBM deployment. The second-generation SS-7 and SS-8 were both proven systems already in the initial deployment phase, and the 1961 [redacted] forecast of a U.S. ICBM arsenal numbering over 1000 launchers by 1965 doubtless put him under considerable pressure to continue that deployment effort at a rapid pace. At the same time, the new third-generation systems then under development certainly offered attractive possibilities as well, giving Khrushchev an equally pressing incentive to hold off on massive deployment of existing launchers pending further progress in the SS-9/SS-[redacted]10 prototype competition. Most likely he opted for a "satisficing" solution, continuing with the SS-7 and SS-8 deployment programs as initially conceived (and placing MR/IRBMs in Cuba as an interim stopgap measure) while proceeding apace with the SS-9 and SS-[redacted]10 development efforts as the main hope for the Soviet ICBM posture in the latter half of the 1960s. Following the Cuban fiasco, Khrushchev probably went a step

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further and actually committed the Soviet Union to some preliminary level of SS-9 and/or SS-[redacted]-10 deployment, as attested to by intensive flight testing of both missiles beginning in 1963 and commencement of new large silo construction for the systems in early 1964. By then, however, time was quickly running out for him and the final choices regarding both which new ICBM to concentrate on and what ultimate force ceiling to aim for most likely remained in abeyance for his successors to make.

(U) When Brezhnev and Kosygin took office, they probably faced at least five interconnected decisions regarding the ultimate complexion and composition of the Soviet heavy ICBM force: (a) where to draw the line on further SS-7 and SS-8 deployment; (b) whether to deploy the SS-9, the SS-X-10, or some combination of the two; (c) what targeting roles and missions to allocate to their large-yield ICBMs; (d) what final force size--given the fact that the smaller SS-11 was by then also under concurrent development--to settle on for their heavy ICBMs; and (e) what mix of the various heavy-ICBM "Mods" to include in the total force. The first two of these decisions probably came quickly following the new regime's accession to power, while the remaining three were of the more complex sort touching on a wide range of institutional interests that most likely would have been reserved for consideration during the formal defense planning process in 1965-1966. (Indeed, the issue of the SS-7s and SS-8s may well have been settled even *before* Khrushchev's ouster, in view of the fact that their deployment ground to a halt less than a year thereafter in mid-1965.)

1. The SS-9/SS-[redacted]-10 Design Competition

(S) In the prototype fly-off, as we now obviously know, the SS-9 was ultimately chosen over the SS-[redacted]-10 as the mainstay heavy ICBM for the late 1960s and early 1970s. What is not clear, however, is why the SS-[redacted]-10 not only lost out in the competition but also received no deployment at all. Traditionally, the Soviet practice has been to deploy all their proof-tested ICBMs at least to some extent, losers as well as

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winners, presumably to facilitate keeping the losing design and production entities up to speed in the missile business pending commencement of R&D on the follow-on generation. Although in each case the lion's share of resource commitment has clearly gone to the preferred systems, this redundant procurement practice has seen numerous instances where the losing design (or, as the case may be, the more conservatively developed "fall-back" option) has received token deployment alongside major ICBM procurement items. Examples of this practice include the SS-8 and the SS-13 during the 1960s and the SS-17 today, competitors to the SS-7, SS-9, and SS-19, respectively. Even the first-generation SS-6 with all its technical and operational problems was allowed to attain IOC (though with a total force of only four launchers) despite the fact that it was probably never intended for large-scale deployment.

(S) Why the SS-[redacted]10 never entered the SRF inventory at all remains something of a mystery. Certainly it could not have been because the system was plagued by insurmountable technical problems. [redacted] Why it was overshadowed by the SS-9, however, is a question for which there are some grounds for reasonably informed speculation. For one thing, the SS-9 was a direct evolutionary outgrowth of the tried and proven SS-7 and, despite some failures in the initial flight-test phase, may simply have impressed the SRF and the VPK as the system possessing the greater capabilities and growth potential. Conversely, the SS-[redacted]10 was a less technically elegant booster which employed cryogenic rather than storable propellants and which, despite its highly successful flight test program, may accordingly have appeared (a) inherently less than suitable for silo deployment, (b) unsatisfactory on combat readiness grounds because of the long prelaunch fueling and preparation time required, and (c) generally a poor bet for the hard-target backbone of the SRF during the decade to come. Moreover, it had been developed by [redacted]

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[redacted] the design bureau [redacted] which had [redacted] demonstrated a somewhat less than stellar track record in the ballistic missile business.

(S) Finally, one cannot entirely rule out the possibility that a Soviet variant of "porkbarrel politics" had some bearing on the decision. Brezhnev, after all, had occupied an important post in the Dnepropetrovsk region during his rise to political power, and the SS-9 was a product of [redacted] the Dnepropetrovsk Missile Design and Production Center. It is not inconceivable that aside from whatever technical virtues the SS-9 may have had to recommend it, Brezhnev may have had personal reasons for favoring the DMDPC over [redacted] (the producer of the SS-[redacted]10) motivated by a desire to "pay off," as it were, his former colleagues and present constituents in the Dnepropetrovsk Party apparatus. This possibility is further reinforced by the fact that the competing SS-[redacted]10 was the brainchild of Korolev, a designer who had been heavily backed by Khrushchev and to whom Brezhnev owed no political loyalties.

(S) Whatever the explanation, the SS-[redacted]10 program was evidently cancelled shortly after the new regime assumed office, and full effort was placed on the SS-9, which achieved IOC (in its Mod 1 variant) in early 1966. Having thus committed itself in principle to exclusive concentration on the SS-9, the new leadership now faced the more complex and politically involved issue of how large the force should be and how to reconcile its heavy-ICBM deployment preferences with competing military and nonmilitary claims on Soviet resources. The SRF, for its part, further faced the question of how to rationalize deployment of the SS-9 to its Party superiors at a time when U.S. hard targets were becoming far too numerous for any fiscally manageable SS-9 force to cover them all and when the smaller and less expensive SS-11, notwithstanding its lack of hard-target potential, was on the threshold of becoming available in abundance.

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2. Rationales for the SS-9

(U) Although again hard evidence is lacking, there are a number of reasons for surmising that the Soviet military may have seen the SS-9 during its initial design phase as their prime candidate for the hard-target counterforce mission against MINUTEMAN in the late 1960s and beyond. For years, Soviet doctrinal pronouncements had repeatedly stressed the importance of attriting the enemy's nuclear means of attack early on in any war and, through their frequent references to the notion of "breaking up" and "frustrating" enemy offensive operations, were heavily laced with implied endorsement of preemption as a preferred mode of strategic force application. This doctrinal position, however, drew virtually no support from deployed Soviet ICBM forces of the time, whose miniscule numbers and gross inaccuracies were woefully inadequate to accommodate the growing array of hardened aim points presented by the U.S. MINUTEMAN target set. A workable solution to this problem may have presented itself in the SS-9, whose extraordinarily large-yield warhead (in the 18-25 MT range) could compensate for persistent Soviet delivery inaccuracies and promise near-certain kill probabilities against MINUTEMAN silos and launch-control facilities (LCFs).

(U) At the same time, however, there was an obvious problem which the SS-9's high single-shot kill probability against U.S. silos could not by itself resolve, namely, how to deal with the numerically large target array that the U.S. MINUTEMAN force was increasingly coming to present. By 1964, well before the SS-9 effort had firmly jelled, the United States had publicly declared that it was working toward a programmed force of 1000 MINUTEMAN launchers, to be deployed in groups of ten silos with each group of ten to be served by a single hardened LCF. Given the high unit-equipment cost of the SS-9, it is unlikely that the Soviets were disposed to build a heavy ICBM force large enough in size to match the programmed MINUTEMAN posture one for one, all the more so since the smaller and cheaper (by two-thirds) SS-11 was concurrently coming down the pike as the preferred Soviet system to close the ICBM numbers gap with the United States. Yet the SS-11, for its part, did

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not offer the necessary yield/accuracy combination to pick up the counterforce mission where the SS-9 left off. Why, then, did the SS-9 evolve in the first place, and how did the SRF justify its deployment at the relatively limited total force ceiling of around 300 launchers it ultimately reached?

(S) One possible explanatory hypothesis (and it can only be that in the absence of hard data) is that the SS-9 was originally conceived as a delivery vehicle for the large warheads [redacted] (and not necessarily as a hard-target killer), entered initial prototype development before the Soviets had any idea how large the U.S. MINUTEMAN force would eventually become, was in the beginning intended to receive only nominal deployment roughly on the scale of the SS-7 effort, and was finally sold as an LCF killer once it became clear that MINUTEMAN would ultimately attain a force ceiling of 1000 launchers. Such a hypothesis is suggested by two bits of circumstantial evidence: (a) [redacted] the SS-9 Mods 1 and 2--which comprise by far the bulk of the total force--are explicitly targeted against U.S. MINUTEMAN fields, and (b) it is clear from the comparative numbers involved that the SS-9 force cannot cover even a third of the total number of aim points presented by the MINUTEMAN target array, leaving LCFs the only remaining and obvious targeting objective. Under this hypothesis, Soviet strategic planners may have calculated that while they could not hope to target every single MINUTEMAN silo in a counterforce disarming attack, a guaranteed ability to destroy the 100 MINUTEMAN LCFs might sufficiently disrupt the capability of the force to retaliate effectively that they could take out the force, for all practical purposes, without having to neutralize each silo directly.

(S) There are, of course, some formidable problems with this hypothesis. One is the fact that the MINUTEMAN force is internetted so as to allow any single LCF to launch all 50 missiles in its parent squadron in the event that their own LCFs are inoperative or destroyed. Another is the launch-system redundancy provided by the alternative

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Airborne Launch Control Center (ALCC), a KC-135 aircraft on constant airborne alert with full targeting data aboard which, if necessary, can launch the entire MINUTEMAN force in the event that its ground-based LCFs become incapacitated. A third, finally, is the possibility that the SS-9 Mod 2s (which make up most of the total SS-9 force) may suffer a range/payload limitation severe enough to prevent them from being able to reach many MINUTEMAN fields from their deployed launch points. (The SS-9 Mod 1, with an 18-MT warhead weighing 9500 pounds, can be boosted to 7000 nautical miles, more than enough to cover the entire United States. By contrast, the Mod 2, with its heavier 13,500-pound RV in the 25-MT category, is range-restricted to around 5300 nautical miles, which from its deployment sites only allows it to reach the northernmost U.S. MINUTEMAN complexes.)

(S) With some heroic allowances, however, it may be possible to reconcile these problems sufficiently to allow the LCF hypothesis to retain a degree of plausibility. On the first count, the Soviets may have been inclined not to worry about the interneting of MINUTEMAN ground LCFs on the assumption that the SSPK and total inventory of their SS-9s would be more than adequate to provide a high-confidence capability against all 100 of the LCFs. On the second count, the matter of the ALCC is rather more difficult to explain away. Existence of the ALCC system was publicly disclosed in the United States as early as 1961, well before the SS-9 program was at the point where major procurement authorizations and deployment decisions had to be made, and the Soviets surely were aware that a counter-LCF strategy would be ineffective without some accompanying way of dealing with the ALCC. They may, however, have convinced themselves that the ALCC would suffer heavily degraded performance capabilities in the intense confusion and stress of an ongoing nuclear operation against MINUTEMAN, would be far more tenuously connected to the U.S. NCA than ground-based MINUTEMAN LCFs with their land-line communication links, and accordingly would be either hesitant about initiating a salvo launch of the MINUTEMAN force or, for whatever reason, actually unable to carry out the launch.

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Additionally (though highly remotely), they may have assumed they could keep reasonably good track of the ALCC's position and heading through technical intelligence means and, in an ICBM variation on the air-to-air fighter tactic of "pulling lead" against the target, physically disable or destroy it with a carefully orchestrated pin-down barrage. On the third count, the Soviets may have been able to cope with the Mod 2 range/payload constraint by allocating their Mod 2s solely against the most northerly deployed MINUTEMAN fields and using the longer-legged Mod 1s against those MINUTEMAN complexes situated further south. [redacted] the deployed "mix" of Mod 1s and Mod 2s closely fits the geographic distribution of U.S. MINUTEMAN complexes at different ranges from Soviet launch points, with the result that every MINUTEMAN site can be reached from at least one SS-9 group.

(S) In addition to the MINUTEMAN LCF-coverage case, one can imagine other plausible rationales for the SS-9 deployment. For one thing, it could have been justified as a hedge against the troubled SS-11, a weapons system conceived several years after the SS-9 in a crash program to catch up with the U.S. in gross numbers of ICBMs [redacted] Moreover, given the SS-11's lack of counterforce potential, the SS-9 could also have been sold as a system which could at least substantially draw down the MINUTEMAN inventory in a force-reducing first strike even if it could not promise to take out the U.S. land-based force entirely. Finally, and perhaps most plausibly, it could have been rationalized simply as an effective hard-target killer with considerable growth potential which would at last put the Soviet Union squarely in the counterforce business (as Soviet doctrine had long insisted upon), offer the SRF valuable OT&E and target-planning experience with a truly counterforce-capable ICBM, and at the same time provide the requisite hardware basis for ultimately acquiring a more extensive counterforce posture.

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(S) In this last regard, it is worth considering the case of the SS-9 Mod 4, the definitive variant of the SS-9 which carried an MRV triplet consisting of three 5-MT warheads. This system was almost certainly in an advanced planning state at the time the Mod 1 achieved IOC, and the Soviets may well have developed it as the testbed for a MIRVed SS-9 front end which could eventually be retrofitted on the entire SS-9 force, giving the SRF a full-coverage heavy-ICBM capability against MINUTEMAN precluded by the single-RV SS-9s. Precisely what the Mod 4 was intended to be, of course, remains one of the major unanswered [redacted] questions of the late 1960s, and it is thus impossible to venture this hypothesis as anything beyond sheer speculation. In fact, there is some reason to wonder whether it has any validity at all: the first Mod 4 launch [redacted] coincided with the first U.S. MIRV flight test aboard POSEIDON. The Soviets knew some time in advance that the U.S. MIRV test was forthcoming, and the timing of their initial Mod 4 flight suggests as one possibility that they may merely have wanted to get their own multiple RVs in the air simultaneously as a propaganda gambit to ward off any impression that they were being outdone in the MIRV business by the United States. Yet, at the same time, the Mod 4 was repeatedly flown thereafter, proceeding to extended-range tests in April 1969 and even achieving IOC in token numbers in 1971. Moreover, while it was clearly not a full-fledged MIRV system with a PBV dispenser and an independent targeting capability, it appeared to be rather more than a simple MRV, involving a hybrid rail-launch RV release system which produced a weapons laydown footprint roughly approximating the pattern of U.S. MINUTEMAN silos.

(U) Whatever the case, by the time the Mod 4 had reached the flight-test stage, the follow-on SS-18 with its true MIRV capability was presumably well along in initial prototype development, and Soviet planners may have concluded that the preferred course was to hold out for full SS-18 development and deployment rather than commit major resources to the Mod 4 beyond exploratory RDT&E launches. It is tempting, however, to view the Mod 4 in retrospect as just possibly a first-generation Soviet

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MIRV concept which ultimately never worked out, yet which held sufficient promise during the early phase of SS-9 development to help justify the Mod 1 and Mod 2 deployment program that subsequently ensued.

C. THE SS-11 PROGRAM: CLOSING THE NUMBERS GAP

(U) In contrast to the SS-9 effort, which seems to have constituted a reasonably typical example of the traditional Soviet weapons development process, the SS-11 program is interesting precisely because of the exception to normal Soviet acquisition practice it appeared to represent. The SS-9 had all the hallmarks of being a natural product of the ponderous machinery of Soviet R&D and weapons production, most likely initiated through standard operating procedure at the design bureau level rather than by executive fiat from above. As such, it reflected little more than a normal outgrowth of Soviet engineers characteristically doing their thing, in this case drawing on state-of-the-art technology to design a successor to the SS-7 to be served up to the leadership upon successful completion of prototype development for a deployment decision, with the precise targeting rationale and numerical force ceiling presumably to be worked out at that time. Funding for basic R&D on the system, along with parallel development funding for the competing SS-X-10, may well have been authorized as early as 1960 when the formal budgeting process for the upcoming Seventh Five-Year Plan was still in train. In any event, the SS-9 program appears to have proceeded from its inception largely under its own momentum and with more or less routine deliberation, essentially unbuffeted by urgent directives from above and unlinked in any interactive way with specific U.S. strategic programs. It started out prior to the Cuban missile affair and well before the U.S. MINUTEMAN effort had begun to assume definitive form, progressed steadily to its flight test phase commencing in 1965, and most likely began to pose hard deployment choices only when the full magnitude of the planned U.S. MINUTEMAN buildup finally obliged the Soviet leadership to reformulate what it probably originally saw as a simple "all-purpose" role for the SS-9.

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(U) The SS-11, by all apparent indications, was none of these things. Conceived in the aftermath of the Cuban missile crisis while the shock of the Soviet defeat was still reverberating, it bore all the signs of a crash program purposefully initiated by the leadership to produce a cheap but workable ICBM that could be deployed in large numbers so as to eradicate the image of Soviet strategic inferiority in the shortest possible time. Moreover, in contrast to the general tendency of Soviet strategic programs to reflect, in Andrew Marshall's words, a "muffled, lagged, and very complex" responsiveness to U.S. strategic developments, the SS-11 effort conspicuously appeared to be an almost singular example of pure and studied Soviet reaction to a perceived external threat. In a word, the argument there is that the SS-11 was an unambiguous Soviet response to MINUTEMAN. Had the U.S. in the early 1960s opted for a substantially more modest MINUTEMAN deployment program, and had the Cuban missile crisis not occurred (or at least not ended so disastrously for the Soviet Union), it is quite possible that the SS-11 program would not even have evolved. Yet by committing itself to a 1000-launcher MINUTEMAN force--far beyond anything the Soviets were most likely contemplating for themselves at that time—and by vocally proclaiming its own strategic missile superiority in the wake of the Cuban episode, the U.S. government (doubtless unwittingly and unintentionally) succeeded in casting its gauntlet at the Soviet leadership's feet, inspiring a deep-seated Soviet determination never again to endure such public humiliation, obliging Khrushchev and his successors to take appropriate countermeasures in their own ICBM deployments, and in effect setting the pace of the U.S.-Soviet strategic arms competition that has ensued ever since.

(S) Evidence that the SS-11 was a Soviet rejoinder to MINUTEMAN, while highly circumstantial, is impressive. As noted before, initial development on the system did not appear to start until immediately after the Cuban crisis. Also, the system was somewhat retrograde technologically in the sense that it represented a step backward from the general Soviet trend (reflected in the SS-7, SS-8, SS-9, and SS-[redacted]10)

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toward ever larger, more expensive, and more complex missiles with warheads of increasingly high yield. By comparison to those systems, the SS-11 was quite small and inexpensive, costing only about a third the unit price of the SS-9. The SS-11 even "looked" more than superficially similar to MINUTEMAN: although liquid-fuelled and somewhat larger in its external dimensions, the SS-11 had a range/payload capability roughly on the order of MINUTEMAN's and was armed with a warhead of similar yield (approximately 1.5 MT).

(S) This is not, of course, to assert that the Soviets actually strove to duplicate MINUTEMAN in all its operational and technical parameters. It is, however, to suggest that they desperately wanted to get a functional ICBM in the field with a maximum of speed and minimum of cost that could at least offset MINUTEMAN in sheer numbers and put the Soviet Union on a footing of rough strategic equality to the United States. [redacted] it is altogether possible that at the time the SS-11 program was building up steam, Soviet planners had no immediate strategic objectives for the system at all (either in terms of target coverage or otherwise operationally dictated force ceilings) other than simply catching up with the United States in the ICBM numerical equation. From the very beginning, the program proceeded with extraordinary rapidity, [redacted] By the time deployment of the SS-11 finally ground to a halt in 1970, it had attained a ceiling of around 980 launchers, only twenty short of the definitive U.S. MINUTEMAN inventory.

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(U) Evidence pointing to the SS-11 as an idiosyncratic exception to the general pattern of Soviet strategic weapons acquisition, while equally circumstantial, is also impressive. Ordinarily, the Soviet practice seems to have been to leave the business of program initiation largely to the various organizational entities actively involved in weapons development: the General Staff, the SRF, the various Party and governmental scientific-technical committees, the design bureaus, and the defense industrial ministries. In this stereotypical acquisition process, the R&D community—in constant interaction with the military and the production ministries—nominally generates prototype concepts on an iterative and open-ended basis, with proposals systematically filtering up through the system for review and recommendation at the middle-management level and ultimately for development and deployment decisions at the highest Party echelons. Moreover, throughout the history of Soviet ICBM acquisition, the major decisions regarding massive budgetary authorizations for ICBM development and deployment appear to have been made at critical nodal points in the planning cycle, namely, during the immediate period antecedent to implementation of the general Five-Year Plan. All of this, moreover, has tended to be done in the steady, deliberate, systematic, and frequently ponderous way one would naturally expect of a large socio-political organism like the Soviet Union, with planning milestones being met and development/deployment decisions being made more or less in accordance with standard operating procedures heavily routinized through repetition over time. In the Soviet Union no less than in the United States, major weapons development programs have not been characteristically prone to simply springing forth in reflexive response to some perceived external threat or to some momentary preference of the top leadership. Like most large and cumbersome developmental efforts, they have rather tended to be substantially captives of prevailing technology, available resources, required R&D and production tooling lead-times, and similar permanently operating systemic constraints. (This is, one may add, a major reason why the common characterization of U.S. and Soviet weapons deployments as knee-jerk reactions

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to one another has been largely fallacious and why most such deployments, where interaction has been involved at all, have tended to be responses to general secular trends in the opponent's strategic programs and policies rather than specific moves to emulate or compensate for his developments on a system by system basis.)

(U) In the case of the SS-11, however, this process seems to have been perceptibly inverted and short-circuited, with the development initiative coming from above rather than below (possibly even from Khrushchev personally in a state of barely controlled post-Cuba panic) and the entire developmental effort drastically compressed in the interest of economizing on time. Moreover, the development initiative and ensuing program came squarely in the middle of the Seventh Five-Year Plan—rather than at the beginning of the Eighth--at a time when the full organizational and production machinery of the Soviet state was presumably already running at full speed implementing program decisions previously arrived at. Finally, unlike other Soviet ICBM ventures, the SS-11 program was evidently not backstopped by competitive prototyping even though it was assigned to a design bureau with no previous experience in the ICBM business. (Although the solid-propellant SS-13 was an approximate contemporary of the SS-11, its development rate was substantially slower, and in all likelihood it represented an independent Soviet effort to develop solid-propellant ICBM technology rather than a competitor to the SS-11 with prospects for large-scale procurement. It achieved IOC only in 1969 and even then received no more than token deployment.) Instead, the SS-11 was developed from the beginning on the rough Soviet equivalent of a sole-source contract basis using conservative technology with an apparent view toward producing a simple and successful system with the most efficient management of effort.

(S) Once the SS-11 was well on the tracks and the urgency to field a numerically plentiful ICBM force had become largely satisfied, of course, the effort gradually lost its unique status as a voluntaristically driven outgrowth of leadership fiat and increasingly took on the trappings of a routine weapons program just like the SS-9. In the process, the

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SS-11 became something of a "workhorse" Soviet ICBM, available in abundance for practically all nuclear attack functions short of hard-target counterforce operations. A Mod 2 variant was subsequently introduced, providing marginal improvements [redacted] More important in terms of force flexibility and versatility, around 190 SS-11s were deployed in the Western portion of the USSR as "variable-range ballistic missiles (VRBMs)" offering comprehensive target coverage of Western Europe and China in addition to the United States. Given the relatively short ranges involved, these VRBMs also gave the Soviets an appreciable hard-target kill capability and added substantially to the Soviet Union's peripheral nuclear strike force inventory. Perhaps most indicative of the "routinization" of the SS-11 program was the deployment, beginning around 1972, of the Mod 3 variant [redacted] The Mod 3 was most likely developed originally as system to increase Soviet penetration capabilities against expected U.S. construction of the SENTINEL area-defense ABM system during the late 1960s. Its ultimate deployment, however, began only after the ABM Treaty of 1972 had already obviated the need for that putative mission and thus may simply have been a natural outgrowth of program momentum, rationalized after the fact as a cheap way of getting additional target coverage out of the SS-11 force pending acquisition of the fully MIRVed fourth-generation ICBM systems.

(U) Yet despite its eventual captivation by the ingrained forces of program inertia and organizational process that have so heavily affected most other major Soviet weapons procurement programs, the SS-11 effort stands out as a vivid testimony to the persistent role of rational choice and leadership initiative in Soviet strategic policy formation. While it would be a gross exaggeration to describe the SS-11 program as a Soviet analogue to the U.S. Manhattan Project, it had many of the same basic earmarks: urgent responsiveness to a perceived external challenge, concentration of economic and technical resources, and implementation in accordance with an extremely tight (if not altogether crash-effort)

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time schedule. It was the SS-11, in the end, that was largely responsible for delivering the Soviet leaders their long-sought posture of strategic equality to the United States, and it was the determination which underlay it that played the dominant role in leading the United States ultimately to abandon the idea of strategic superiority to seek instead a stabilization of the superpower arms competition through SALT.

D. SALT AND THE FOURTH-GENERATION ICBM PROGRAMS

(U) Needless to say, the story of Soviet involvement in SALT is a separate chapter all to itself in the history of post-Khrushchev Soviet strategic policy and can scarcely be addressed in full detail in the limited space available here. At the same time, it deserves more than cursory mention if only because it provides a highly salient retrospective mirror of underlying Soviet strategic force-posture objectives and because of its fundamental role in redefining the traditional norms of East-West strategic arms competition.

(U) On the latter count, which we can dispense with in brief, the SALT dialogue has had the effect of removing U.S. and Soviet strategic programs from the realm of straightforward action-reaction dynamics and placing them, for the first time in the history of the nuclear age, in an explicit bilateral negotiating context. Whether the net consequence of this in terms of resultant U.S. and Soviet force postures has been radically different from what would most likely have obtained in the absence of SALT is a highly judgmental matter which we shall leave for others to address, but there is no question that the SALT process has deeply permeated the traditional defense decisionmaking mechanics of both superpowers and in a sense "regulated" the long-term U.S.-Soviet strategic competition, obliging each side to consider new weapons developments and deployments not only in terms of their objective feasibility and desirability but also with a careful view toward their compliance with the accepted modalities of SALT.

(U) Of principal interest here is what SALT suggests on the former count, namely, about Soviet strategic perceptions of the United States,

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about Soviet weapons deployment objectives and preferences, and about Soviet expectations regarding the limits of the attainable in shoring up their position in the overall strategic balance. The SALT dialogue began, it may be recalled, in 1968 at a time when Soviet strategic force expansion was in full swing, American ICBM and SLBM deployments were gradually winding down, and the United States was fully engaged in the Southeast Asian war. Although it commenced in the first place largely due to the successful persistence of U.S. diplomacy rather than because of any manifest interest in arms control on the part of the Soviet Union, the Soviet leadership may well have seen the prospect of SALT as a fortuitous opportunity to capitalize on the Vietnam War and the apparent U.S. lack of resolve (or ability) to continue vigorous strategic arms competition at the same time by negotiating an arms accord that would simultaneously put a brake on future U.S. strategic deployments, accommodate planned development and deployment of the fourth-generation Soviet ICBMs, and legitimize the Soviet pursuit of strategic parity (or better) within a framework of explicit American acceptance.

(U) Obviously, of course, the SALT experience has been far too complex and multifaceted to permit any reductionist conclusion that the Soviet leaders have simply exploited the dialogue as a subterfuge for "legalizing" a weapons program which they had every intention of implementing all along in any event. If nothing else, SALT has at least committed the Soviets to a specific aggregate force ceiling which they may not otherwise have been content to settle for and has concomitantly channeled the arms competition away from open-ended pursuit of numerical force advantages into an equally intense but somewhat more bounded concentration of effort on the qualitative front. Perhaps equally important, it has obliged the Soviet leaders--at least as long as they desire to continue reaping the tangible economic and diplomatic benefits of détente--to conduct themselves in such a way as to indicate general compliance with the letter (if not the spirit) of the SALT I Interim Agreement and ABM Treaty.

(U) Having said this, however, one can go on to argue that SALT I did not impede Soviet strategic programs in any fundamental way, and to

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hypothesize that the Soviet leaders indeed carefully conducted their SALT I negotiations in such a way as to guarantee that deployment of the fourth-generation ICBM force and advanced R&D in other areas of military technology could continue apace. Again, while categorical proof for such an argument is difficult to come by, the available circumstantial evidence is compelling. To begin with, basic prototype development of the new systems was probably authorized and budgeted in the Eighth Five-Year Plan beginning in 1966, over two years before the SALT I process even had become formally set in motion. Moreover, by that time the Soviets were keenly aware that the United States was well along in its development of MIRV and doubtless felt strong incentives to match the United States in that arena. Most likely the SS-17, SS-18, and SS-19 were conceived from the beginning as prospective MIRV carriers and were intended by Soviet planners all along as programs destined for major deployment. All three systems proceeded through their initial development phase with the same steadfast deliberation that seemed to characterize the SS-9 program, as though nascent arms control deliberations at the diplomatic level and the prospect of a formal SALT dialogue did not even exist. New large silo construction for the SS-18 began to show initial signatures in late 1970, nearly two years before the SALT I Interim Agreement was finally concluded. And within eight months after SALT I, all four of the new ICBMs were in flight testing, suggesting that initial prototype construction had begun at least two years beforehand and that basic design specifications had been well in hand even earlier. In the interim, the Soviets had succeeded in negotiating a SALT agreement on offensive forces which permitted a 15 percent expansion of existing silos (without specifying precisely what dimensions that expansion involved) and which remained studiously noncommittal on the critical question of what constituted a "heavy" ICBM.

(U) Strongly implied by all this is that the Soviet leaders (a) entered SALT from the outset far less interested in achieving genuine arms control than in expanding their strategic arsenal to the full limits

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that U.S. tolerance would bear, (b) authorized vigorous development of their fourth-generation ICBMs knowing full well that it would proceed largely beneath U.S. scrutiny, and (c) carefully constructed their negotiating stance at SALT (notably their ambiguity on the 15 percent silo-growth provision and their refusal to settle on a precise definition of "heavy" ICBM) so as to permit large-scale deployment of those ICBMs within the final constraints of the Interim Agreement. Less strongly implied, but still plausible, is the additional possibility—given the depth of initial Soviet commitment to the fourth-generation programs and the energetic forward momentum those programs had acquired by early 1972—that the Soviet leaders would have been disposed to let SALT degenerate into an essentially meaningless declaration of principles (or even go by the boards altogether if necessary) rather than sacrifice the option of deploying a MIRVed ICBM force toward which they had so heavily engaged themselves during the preceding five years.

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IV. CONCLUSIONS

(U) This paper has been a quick, highly fragmented, and often impressionistic overview of a complex period of Soviet history which could easily have been treated in far greater breadth and detail than available time and space have permitted. Nonetheless, enough has been said in the way of descriptive reconstruction and inferential hypothesizing to permit some reasoned (if argumentative) generalizations about the dominant trends and patterns of Soviet strategic policy under the Brezhnev leadership.

(U) Perhaps the most salient feature of Soviet policy during this period has been the continuity, purposefulness, and sheer intensity of effort it has shown. It will probably remain, of course, forever unclear what course of action Khrushchev would have charted had he remained in power. There is no doubt, however, that he bequeathed to his successors a weapons development program of broad scope and gathering momentum which provided more than adequate wherewithal for the new leadership to shore up the lagging image of Soviet strategic power and forge ahead as a serious and forceful challenger to the United States in the long-term arms competition. It was by no means obvious to outside observers at the time the Brezhnev-Kosygin regime assumed power in what direction Soviet strategic policy was headed. Indeed, it appeared to many that the regime had, at least for the near term, adopted a "stand pat" strategic policy similar to that pursued by Khrushchev following the Cuban crisis. It was also then postulated by many observers (the present author included) that this presumed policy stance had given rise to a growing rear-guard challenge from the Soviet professional military community, whose principals favored increased force deployments coupled with a clear-cut war fighting strategic doctrine rather than a continuation of the status quo and who accordingly implemented a frontal assault against the Khrushchevian philosophy in the form of a public "debate" in the military press.

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(U) With the benefit of hindsight, however, it seems clear that the Brezhnev-Kosygin leadership instead hit the deck running, as it were, with every intention of redressing the strategic postural shortfall it inherited from Khrushchev. It also appears probable in retrospect that the seeming military "outspokenness" in Soviet doctrinal writings of the time reflected authoritative Party views at least as much as it did the parochial preferences of the General Staff.

(U) The initial objective of the Soviet leadership was probably little more than simply to catch up with the U.S. in raw numbers of operational ICBMs, a goal the Soviet Union was well on the way to achieving once the SS-9 and SS-11 deployment programs had come up to full speed. By 1967, however, one may surmise that the Brezhnev-Kosygin regime had sufficiently satisfied itself on that score to sit back, examine the evolving external threat environment, and begin setting more specific and operationally meaningful strategic objectives for itself. At that time, the SS-9, SS-11, and YANKEE-class SSBN deployment programs were in high gear, the fourth-generation ICBM systems were presumably well along on their R&D schedules, and Soviet public pronouncements had begun to exude a growing and almost unprecedented tone of self-confidence and composure. In the international arena, the United States had become fully caught up in the Vietnam war, seemed less and less inclined to move beyond the programmed force-levels it had laid down in the early 1960s, and indeed had begun to sound out the Soviet Union on the possibility of an ABM limitation accord in an incipient probing operation which, following repeated permutations and false starts, eventually grew into the formal SALT dialogue which commenced in 1969. In this setting, the Soviet leadership may well have convinced itself that additional, more ambitious strategic goals were potentially within its grasp as well, possibly including even the attainment of some degree of actual strategic advantage over the United States. Whatever the leadership's private thinking may have been on this score, the Soviet Union by 1972 had quantitatively outstripped the West in conventional theater forces--both air and ground--opposite NATO, achieved numerical ascendancy over the United

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States in all static indicators of strategic nuclear power other than long-range bombers and deliverable warheads, and negotiated a SALT Agreement which both ratified Soviet "essential equivalence" to the United States in overall strategic offensive power and provided the necessary "headroom" (through the throw-weight advantage it formally granted the Soviet ICBM force) for eventually pressing ahead in numerical RV strength as well.

(U) What conclusions does the foregoing suggest about the underlying Soviet strategic policymaking "style" of the Brezhnev era and about the broader context of East-West strategic interaction in which Soviet programs of the past decade have been set? Again, one hesitates to attempt categorical answers to such difficult and complex questions, but it seems reasonable enough at least to venture the following observations as hypothetical propositions for further reflection and research:

(U) The ICBM force selection process. To a far greater extent than the United States, the Soviet Union has appeared to engage in competitive prototyping almost as a standard procedure in the ICBM field and—save for the SS-[redacted]10--has elected to deploy all successful prototypes, losers as well as winners, at one numerical level or another. As a result of this, the Soviet ICBM inventory has become a veritable flea-market of diversified missile systems, with eight distinct ICBM types (excluding the various Mods) currently on operational status. The reasons for this multiple deployment pattern are not altogether clear (though one possibility may simply be a preference for allocating a participatory role to all major design and production entities so as to keep them from becoming moribund), but the Soviet penchant for competitive prototyping seems clearly to reflect an underlying "fly before buy" ethic aimed at assuring that the system ultimately chosen for major deployment will embody reliable and proof-tested technology.

(U) The ICBM R&D process. The strong temptation here is to describe the Soviet ICBM R&D community as a sort of perpetual motion machine writ large, whose individual design groups operate under a permanently operating mandate to exploit state-of-the-art technology,

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develop prototype launch vehicles, flight-test them, serve them up to the leadership for deployment decisions, and then move on to development of follow-on systems as a natural order of business unbound by any strictures to await formulation of specific military requirements from above. The entire Soviet history of ICBM development beginning with the SS-6 has seen each major design group working at high intensity without significant interruption between systems: the SS-9 was under development at the time its predecessor, the SS-7, was just coming into operational deployment; the SS-18 was being conceptualized even *before* its predecessor, the SS-9, had ~~even~~ reached IOC; and an entirely new fifth-generation of ICBMs is currently being developed even while the fourth-generation force is still only in its early phase of a major deployment program that will probably continue in some form or another until well into the 1980s. The United States has no comparable experience with such an R&D style, and the long-term continuity it exhibits suggests a useful predictive tool for facilitating broad estimates of what Soviet strategic choices and capabilities will look like in the decade ahead.

(S) Soviet strategic programs and the East-West arms interaction process. Enough in the way of persuasive argumentation has been said in recent scholarly writings discrediting the notion that U.S. and Soviet weapons developments have simply been knee-jerk reactions to one another that no useful purpose could be served by rehashing that case here. It might be worthwhile, however, to comment briefly on an idiosyncratic feature of the Soviet budgetary process that bears importantly on the larger debate about the role and relevance of the so-called "action-reaction phenomenon" in the U.S.-Soviet strategic relationship. There is good reason to believe that Soviet strategic force planning is heavily tied up with the larger economic Five-Year Plan, and that major budgetary allocations, system development commitments, and deployment programs are worked out during the critical formulation period preceding final definition and implementation of the Plan. One may infer from this that once the critical budget planning phase has passed, the broad

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magnitude, complexion, and vector of major procurement programs become largely locked on course with a life of their own and remain highly resistive to radical modifications in midstream. There can be notable exceptions to this, of course, under conditions of extraordinary external pressure where the perceived requirements of Soviet security dictate forceful leadership intervention after implementation of the agreed-upon Five-Year Plan is already formally under way. (The SS-11 is the case which immediately comes to mind in this regard.) But the general pattern seems to be one of major program commitments occurring principally during the nodal year between successive Five-Year Plans rather than at random times of the Soviet leadership's choosing. If this is the case, then it seems plausible to suggest that if emulative or offsetting reaction to U.S. strategic programs occurs at all in the Soviet defense decisionmaking process, it is most likely to manifest itself during the major program planning phase rather than immediately on the heels of a perceived external threat. And given the dysrythmic character of the resultant Soviet response, it is likely to reflect more a reaction to general secular trends in U.S. strategic R&D and deployments than a specific effort to copy or compensate for some specific U.S. system.

(U) The relationship between leadership preference and organizational process. If any single characteristic appears to dominate the complex pattern of Soviet strategic policymaking, it is the overpowering and sustained influence of *a priori* choice arrived at by the Politburo based on rational assessment of broad strategic requirements and a reasonably clear determination of broad strategic objectives. There is not the space here to digress into an elaborate development of this argument, but it seems fair to suggest that characterizations of the Soviet defense community as a large institutional organism blindly following standard operating procedures in accordance with established institutional norms and self-interests have failed to capture the essence of Soviet strategic programs and policies under the Brezhnev leadership. To be sure, those institutional forces have been abundantly

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present and have doubtless left their mark on the *implementation* of major Soviet weapons programs. But standing over them and giving them broad direction seems to have been a unified national leadership which, while scarcely homogeneous in its values and preferences, has reflected a broad consensus on fundamental issues and an ability to translate its common objectives into policy and hardware. Among those objectives have been the acquition of a strategic force posture generally commensurate in its operational capabilities with the Soviet doctrinal requirement for being able to fight as well as deter a nuclear war, and generally oriented toward seeking as much numerical strength and technical diversity as U.S. tolerance and the traffic at SALT will permit. Indeed, confining this survey solely to the 1964-1972 time-frame has in an important sense involved an artificial (if not arbitrary) division of Soviet history, for the "period of intensive build-up" with which we have been concerned in fact began well prior to the ouster of Khrushchev and, in its broad essentials, has continued uninterrupted to this day despite the constraints of SALT and détente. Such matters as specific force ceilings, technical modifications to existing systems, generation of new proposals and the like have obviously been strongly affected by the vicissitudes of Soviet military politics, Party-military relations, organizational styles, and standard operating procedures. Yet throughout it all, Soviet Union has remained dominated by a command political system led by men with a perceptible sense of purpose and some coherent idea of their strategic goals. While it is surely arguable that different leaders than the current ones might well have chosen force-level objectives different from those implied by the strategic policy of the Brezhnev regime, the star performer in the cast of characters responsible for that policy has been and continues to be Soviet political-military élite collectively playing the role of Rational Actor in Soviet defense decisionmaking, motivated by an unambiguous commitment to expand Soviet strategic power to the maximum extent possible and largely successful in directing the ponderous machinery of the Soviet state to follow its preferential bidding.